

Decision Processes Colloquia

Monday, September 18th

Where: JMHH G 50

Zoom: <https://upenn.zoom.us/j/96528402682>

When: 12:00 – 1:20 pm

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Non-Random Effects: Designing & Analyzing Experiments With Multiple Stimuli (In The Real World)

ABSTRACT:

Psychology experimenters choose stimuli to proxy for underlying theoretical constructs. This selection is typically haphazard, routinely resulting in confounded manipulations that threaten studies' validity. In this article we consider the design and analysis of multi-stimuli studies. First, we introduce "match-and-mix", a 6-step procedure for generating stimuli matched on all conjectured confounds across conditions. Second, we note that the current consensus for analyzing experiments with multiple stimuli, complex mixed-models, leads to (1) low power, and (2) absence of informative contrasts across specific stimuli. Third, we propose -instead- running simpler analysis (e.g., t tests) on the aggregate data, followed by exploratory visual displays we call "stimuli plots", contrasting observed vs expected variation across fully described stimuli. We make our arguments reanalyzing data from published papers and conducting simulations.

